

⑪ Ⓐ No. 958960

④⑤ ISSUED Dec. 10, 1974

⑤② CLASS 133-1
C.R. CL.

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CANADIAN PATENT

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DUAL-COIN OPERATED VENDING MACHINE

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APPLICATION No. 149,332

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FILED Aug. 14, 1972

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PRIORITY DATE

No. OF CLAIMS 7

ABSTRACT OF THE DISCLOSURE

A coin acceptor mechanism for use in a coin operated vending machine, and in which the machine may be internally adjustable to accept either one or two coins so as to permit a variation in the value of merchandise sold from the machine, and incorporating a first coin deflector which is movably mounted in the coin delivery path, and a coin receptor which is mounted for movement in unison with the deflector for receiving a deflected coin and supporting it away from the path, and a second coin detector located in the path below the deflector and a first coin release member which is operatively connected to the second coin detector, whereby to release the first coin upon operation of the detector.

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The present invention relates to coin operated vending apparatus, and in particular, although not exclusively, to such as is used for vending postage stamps, packaged in folders.

BACKGROUND OF THE INVENTION

Coin-operated vending machines of the type under consideration, generally speaking must at least meet the following requirements:

- (1) The article release mechanism must be actually operated by the passage of the coin through the machine. This type of function must be distinguished from the more common vending machine construction wherein the insertion of a coin merely permits an operator to operate a delivery mechanism by means of a separate lever or arm, or slide.
- (2) It must incorporate a sensitive coin rejector since the articles being sold are of a relatively high value in comparison with articles typically sold in simpler types of apparatus.
- (3) It must incorporate jammed coin release mechanism.
- (4) It must incorporate a coin return mechanism for returning excess coins inserted inadvertently.
- (5) It must incorporate means for rejecting and returning a coin when the machine is empty.

Vending machines having most of the foregoing characteristics are disclosed for example, in Canadian Letters Patent 619999 and Canadian Letters Patent 811540.



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10 In vending machines that have been used for the selling of cheaper articles, the coin is usually inserted into what is referred to as a "coin slide", and the slide is then pushed inwardly and withdrawn again to dispense the article. This somewhat simpler type of operation is generally unsuitable for use in association with the vending of, for example, postage stamps and like articles of greater value since the coin slide type of mechanism may be unsuitable for use in a machine which is to be located on the exterior of a building and, in addition, is somewhat insecure and does not usually incorporate a sufficiently sensitive rejector mechanism.

By contrast, in machines of the type to which the present invention is directed, the coin or coins are usually required to be inserted into a slot in the machine, and then pass through the interior of the machine through the various portions of the mechanism.

20 As a result of the need to meet all of these various requirements, in a fairly sensitive mechanism, it has in the past been more or less necessary to design the particular coin operating and coin rejecting mechanism for the vending of a particular article of a particular value. Thus, for example, a machine of this type designed to sell a booklet of postage stamps of a certain value would require some modification for selling a booklet of greater value. It is desirable, therefore, to provide a vending machine of this type which may be designed to respond to the insertion of a coin of a predetermined value, or, by a minor adjustment, to the insertion of two such coins. In this way, the machine can be used for the vending of articles

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of two different values, without the requirement of redesigning the machine or producing a different model. In this way, greater economies in production can be achieved, and the problem of instructing maintenance personnel is greatly reduced.

However, it will of course be appreciated that in addition to the provision of this greater degree of flexibility, such a machine should also reject either a second coin or a third coin which may be inadvertently inserted depending on which type of article is being sold in that machine.

BRIEF SUMMARY OF INVENTION

The invention, therefore seeks to provide a coin-vending apparatus of the type in which passage of a coin through the apparatus operates the article dispensing means and coin return means and means adaptable to accept either one coin or two, and conversion means for converting from single coin to double coin operation.

It is a further objective of the invention to provide apparatus having the foregoing advantages incorporating first coin storage means and stored first coin return means operable in the event that the second coin is rejected or becomes mislaid so that the accepted first coin may be returned.

It is a further objective of the invention to provide apparatus having the foregoing advantages and incorporating second coin sensing means and third coin rejection means being operated by said second coin sensing means.

It is a further objective of the invention to provide apparatus having the foregoing advantages, and incorporating

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article release means which are operable upwardly and downwardly between cocked and released positions for operating the article dispensing means and where the insertion of the first coin raises the same to its cocked position and insertion of the second coin and acceptance of said second coin releases the same to its released position.

The foregoing and other objectives will become apparent from the following description of a preferred embodiment of the invention which is given by way of example only with reference to the following drawings in which like reference numerals refer to like parts thereof throughout the various views and diagrams.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a front perspective illustration of the apparatus according to the invention, with the exterior housing removed;

Figure 2 is a rear elevational view of the apparatus shown in figure 1;

Figure 3 is a skeletal view of a portion of the coin accepting mechanism and the article dispensing mechanism of the apparatus shown in figures 1 and 2;

Figure 4 is a side elevational view of the coin accepting and storing mechanism shown with a portion removed therefrom for the sake of clarity;

Figure 5 is a schematic side elevational view of a portion of the invention as shown in figure 4, showing the path of movement of a rejected coin;

Figure 6 is a schematic side elevational view similar to that of figure 5, but showing the path of

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two accepted coins;

Figure 7 is a schematic side elevation view corresponding to figures 5 and 6, but showing the path of a single accepted coin;

Figure 8 is a perspective illustration of a portion of the mechanism, and;

Figure 9 is an enlarged side elevational view of a further portion of the mechanism.

DETAILED DESCRIPTION OF A PREFERRED EMBODIMENT

10 Referring now to Figure 1, it will be seen that there is disclosed the face panel 10 of a vending machine for stamps or the like in booklet form which are omitted for the sake of clarity. It will be understood that the interior mechanism shown behind the face panel 10 is itself contained within a generally rectangular box-like housing which is also omitted for the sake of clarity. The details of such face panel and box-like housing (Not shown) are to all intents and purposes similar to that shown in Canadian Letters Patent No. 811540, dated April 29, 1969, and are in any event relatively unimportant to the invention and may be subject to variation depending upon the merchandise to be sold.

20 However, it will be noted that the face panel 10 is provided with a coin slot 11 at its upper end, and an indicator window 12 which is used to show both the value of the merchandise being sold and also whether the machine is full or empty.

30 A rejected coin delivery slot 13 is provided about midway down the face panel 10. Alongside the slot 13, there is a coin release button 14.

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At the lower end of the face panel 10, there is provided the delivery opening 15 and shelf 16, coupled to the interior delivery chute 17.

Articles such as booklets of postage stamps are stored in a vertical stack in support column members 18.

As has been explained above, the insertion of a coin into the slot 11 sets up or cocks the release mechanism of the vending machine, and passage of the coin through the coin acceptor mechanism then releases the already set-up or cocked mechanism which then causes dispensing of a single article to the chute 17 and opening 15. Since of course, there is no electrical motor or other outside source of energy, the insertion of the coin into the slot 11 must itself be achieved with sufficient force that the energy so employed, and then stored within the mechanism, is effective enough, when released, to cause dispensing of an article of merchandise.

For the purposes of the following description, it is believed it will be convenient if the entire mechanism is regarded as being divided into five parts, although, of course, it will be appreciated that all of the parts are connected in some way or another and co-operate together to provide the function described above.

These separate portions of the apparatus may be considered as follows:

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- A. Cooking mechanism
- B. Coin rejector mechanism
- C. Coin acceptor mechanism
- D. Escapement release mechanism
- E. Article dispensing mechanism.

Certain parts of this apparatus are manufactured by and purchased from others and other parts of the apparatus are the same or closely resemble the features described in other Canadian Letters Patent. Thus, for example, the rejector mechanism C is manufactured by and purchased from National Rejectors Inc., and needs no further description. The cooking mechanism A is essentially the same as that described in Canadian Letters Patent No.811,540 entitled "COIN OPERATED VENDING MACHINE". The escapement release mechanism D is also essentially the same as that described in the aforesaid Letters Patent 811,540.

The article dispensing mechanism E is essentially the same (at least in function) as that described in Canadian Letters Patent 619,999. For these reasons the descriptions of these components will be minimized as far as possible to avoid unnecessary repetition.

A. Cocking Mechanism:

As is best shown in Figures 3 and 4, the cocking mechanism will be seen to comprise the coin insertion channel 20 mounted on the rear of face plate 10 in registration with slot 11. Immediately above the channel 20, there is provided a relatively massive metallic weighted lever member 21, pivoted as at 22, which is provided on its underside with an L-shaped bracket 23. On the free end of the bracket 23 there is provided the roller member 24 positioned to lie on

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in the upper edge of the channel 20 and contact a coin entering the channel 20.

Lever member 21 is connected to the drop rod 25 which extends downwardly through the interior of the apparatus, and is provided at its lower end with a toothed rack portion 26. On the other side of the lever 21, there is provided interlock bar 29 which extends downwardly to interengage with a portion of the escapement mechanism D, as described below.

10 An adjustable stop member 28 is positioned beneath the lever 21.

Although not illustrated herein, the rack member 26 is connected to tooth gear means forming part of an escapement mechanism as more particularly described in Canadian Letters Patent 811,540.

20 The insertion of a coin into the coin channel 20, will contact the roller 24 and displace the lever 21 upwardly. Upward movement of the lever 21 will draw with it the drop rod 25 and rack 26. Once raised into its upper position, the lever 21 is held in that position by the engagement of the rack 26 with the escapement mechanism D, until a coin or coins have passed completely through the rest of the apparatus and have been accepted by the coin acceptor mechanism. In this way, the energy sufficient for the operating of the article dispensing mechanism E is stored, and made available for use.

B. Rejector Mechanism:

The rejector mechanism is shown in detail only in Figure 1. It will be noted in this illustration that the

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rejector mechanism B is shown separated from the machine, but is, of course, in fact removably supported in the machine by means of support pins 30 engaging in mating slots in support brackets 31. Any suitable set screw 32 can be provided for securing the rejector B in position.

As noted above, the rejector B is manufactured by National Rejectors Inc., and is of a relatively sensitive type. Such rejectors are fully described in the art and require no further description. It will however, be noted that the function of the rejector is to deliver a valid coin to the valid coin path indicated as 33, and to pass invalid coins or slugs down the invalid coin path 34. In addition, such rejector B is slightly modified so as to provide a transverse opening 35 therethrough, the purpose of which will be described later. One other feature of the rejector, which is of interest is the jammed coin release mechanism which comprises the swingable mounting bracket 36 which may be swung outwardly against spring biasing means incorporated in the rejector whereby to release a coin or slug which has become jammed. The swinging of such bracket 36 is achieved by means of the arm member 37 swingably mounted alongside the coin channel 20 and having at its free end a disk like roller 38. The arm member 37 is biased into an upward position by means of a spring 39. A connecting rod 40 extends between the arm 37 and a swingable crank plate 41, (see Fig. 3 and Fig. 9). The crank plate 41 is, in turn, operated by the push rod 42 having at its free end the jammed coin release button 14 on the exterior of face plate 10.

C. Coin Acceptor Mechanism:

As best shown in Figures 1 and 4 the Coin Acceptor

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Mechanism comprises a two part casing or housing having inner and outer side walls 50 and 51, and provided with a rear spacer wall 52, and an intermediate spacer wall 53, thereby locating the two side walls 50 and 51 spaced apart from one another.

The space between the rear spacer wall 52 and the intermediate spacer wall 53 defines the path of travel for accepted coins, and is so designed as to accept either two coins or only a single coin. The mechanism by which these two operations are achieved consists of the moveable deflector arm 54 (Figures 4 and 8) having control pin 55 mounted at the free end thereof, and provided with an operating pin 56 extending rearwardly therefrom. The arm 54 is swingably mounted on the pivot pin 57, which extends through suitable openings in the sidewalls 50 and 51. In order to control the swinging of the deflector arm 54, a counter weight 58 is formed integrally therewith, and is provided with a coin receiving arcuate recess 59.

A generally semi-circular slot 60 is provided in the side wall 51, to provide clearance for the control pin 55, and a similar though smaller semi-circular slot 61 is provided in the side wall 50 to receive the pin 56.

In order to control the swinging movement of the arm 54, the deflector arm control plate 62 is provided, removeably fastened to the side wall 51 by means of the screws 63. In order to detect the passage of an accepted coin as it falls between the walls 50 and 51, a coin detector arm 64 is swingably mounted on the bolt 65 passing between the washers 66. The detector arm 64 is angled out of the vertical, and it passes through a slot 67 in the side wall 50,

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and extends across the spacing between the side walls 50 and 51.

Formed integrally out of the same piece of sheet metal with the detector arm 64 is the first coin support arm 68 provided at its free end with a support plate 69 passing through an opening 70 in the side wall 50, and a corresponding opening 71 in the side wall 51. In this way, the support arm 68, and plate 69 will swing about the screw 65 in unison with the swinging of the detector arm 64.

10 Also formed integrally with detector arm 64 and support arm 68 out of the same sheet metal member, is the coin blocking arm 72, which extends through the opening 35 in the coin rejector mechanism B (see Figure 1). The blocking arm 72 will thus also swing in unison with the detector arm 64 and the support arm 68.

20 The purpose of the coin blocking arm 72 is to block the path of coins through the coin rejector B in the event of any malfunction of the other parts of the apparatus, and thereby deflect such coins back to the slot 13. The blocking arm 72 is normally withdrawn from the hole 35 in the rejector B so as to permit coins to pass freely therethrough. However, once the machine is jammed, or alternatively when the machine is empty the blocking arm 72 will occupy the hole 35 and remain in that position until the machine is either refilled or the blockage is freed. In order to hold the blocking arm 72 in such blocking position, a locking bar 73 is provided pivotally mounted on the screw 73a and having a manually operable arm extending outwardly towards the rear of the apparatus. The locking bar 73, is operated during the cycle of the machine by a flange member 74, formed by an

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endwise extension of the bar 73 on the opposite side of the screw 73a. Flange member 74 is positioned and located to make contact with the cam plate 74a fastened on the drop rod 25.

In order to prevent the passage of further coins when the machine is empty, a further mechanism is provided, which also co-operates with the coin blocking arm 72, and holds it in its blocking position. This further mechanism comprises the yoke member 75, pivotally mounted on the shaft 76 in the support bracket 77. A tongue member 78 is fastened to the yoke member 75 and is swingable therewith into and out of the article support column 18.

The yoke member 75 on one end is provided with the deflector flange 79, adapted to abut against the rear of the coin blocking arm 72, and is further provided on its other end with a hook member 80 interconnecting with the connecting bar 81.

The connecting bar 81 is connected at its upper end to a lever 82, pivotally mounted on the rod 83. The lever 82 is provided with a tongue member 84 at its lower end for operating the empty indicator slide 85 mounted on the face plate 10.

In certain circumstances, where for example a purchaser wishes to purchase an article with two coins, and inserts the first coin which is then accepted and then subsequently finds that the second coin is of the wrong denomination, or that the second coin is rejected by the rejector B, then the purchaser will wish to recover the first coin which has been accepted. Provision is made in apparatus for the recovering of such an accepted first coin

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by means of the checking arm 86 extending through slots 87 formed in side walls 50 and 51 (see Fig.9). The checking arm 86 is an integral part of arm support plate 100 pivotally mounted on screw 101 and having a contact bar 102 extending sideways therefrom. Coin release button 14 is mounted on the outer end of rod member 42, the inner end 103 of which makes contact with contact bar 102. Rod member 42 also operates crank plate 41 by means of pin 104 engaging in slot 105 of plate 41.

10 Crank plate 41 is pivotally mounted on screw 106 and is provided with an arm 107. Arm 107 operates lever 108, by engagement with contact bar 109. Lever 108 is pivotally mounted on screw 110, and is provided with a triangular finger member 111. Finger member 111 is arranged and dimensioned to engage operating pin 56 of deflector member 54.

Inward pressure on the coin release button 14 will thus cause upward swinging of the checking arm 86 within the limits of slots 87.

20 Operation of the button 14 will also swing arm 107 upwardly causing corresponding upward swinging of lever 108. This will in turn cause downward swinging of finger 111, thereby engaging operating pin 56. Movement of pin 56 will swing deflector arm 54 about pin 52 causing counterweight 58 to push the coin resting on the support plate 69 and roll it forwardly down the returned coin chute 88 and out of the slot 13.

30 In order to prevent jamming of the release of the first coin in this way, possibly as a result of having inserted an invalid second coin which has become lodged in the rejector B, a sequence control release plate 89 is provided, pivotally mounted on the screw 90 between side walls 50 and 51. Plate

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89, together with arm 86, prevent the entry of a second coin into the returned coin chute 88, while the checking arm 86 is in its upper position in the slots 87.

Once the coin or coins have passed through the coin acceptor mechanism C, the second of the two coins, or the single coin if only the one coin is required to purchase an article, will then pass through the escapement release mechanism D, permitting the release and downward movement of the cocking mechanism A, and thereby operate the article dispensing mechanism E.

D. Escapement mechanism:

As noted above, the escapement mechanism of the present apparatus is essentially as disclosed in Canadian Letters Patent No. 811,540 entitled "COIN OPERATED VENDING MACHINE", referred to above. The escapement release mechanism D is not therefore described in detail herein. It is to be understood however, that the coin after passing through the acceptor mechanism C then passes through a vertical coin chute or passageway 91, which is provided with an arcuate slot 92 on the outer side thereof. A coin operated arm 93 which is fastened to a drive shaft 94 is provided with a finger member 95 at its free end entering the slot 92 in the path of a coin passing through the chute 91. A moveable counterbalance weight 96 is provided on the opposite end of the arm 93 so as to bias the arm into its upper position as shown in Figure 4. The drive shaft 94 is connected by means not shown to the interior of the escapement mechanism D, and when rotated in a clockwise direction, when viewed from Figure 4, i.e. by downward deflection of the arm 93, it releases the escapement mechanism B, thereby permitting

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the rack 26 and drop rod 25 to fall downwardly under the gravitational force of the lever member 21.

Note that in the event that for any reason lever 21 is not raised to the full extent of its travel, the interlock rod 29 will thus remain too close to the weight 96 or arm 93 and downward movement of arm 93 will be checked before completion, and the escapement mechanism D will not be released at all.

Interlock rod 29 also provides an upper limit of movement for the lever 21 thereby preventing insertion of an oversize coin.

10 E. Dispensing Mechanism:

As noted above, the article dispensing mechanism E is not disclosed in any detail since it is essentially similar to the article dispensing mechanism as shown in Canadian Letters Patent No. 619,999 and requires no further explanation.

By means of a suitable drive shaft (not shown) the movement of the rack 26 is communicated to the article dispensing mechanism E which is shown generally in Figure 2, which then operates to release a single article such as a booklet of postage stamps (not shown) from the bottom of the support column 18 and drop the same onto the chute 17.

20 While various steps of the operation of the parts of the mechanism have been described above, the operation will now be reviewed in greater detail.

Thus the apparatus will normally be in the

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position as shown in Figures 1 to 4, it being understood that there will be a stack of article such as booklets of postage stamps arranged cross-stacked in the support column 18. It will also be understood that such articles will require the deposit of two coins in order to purchase one article.

10 The purchaser will then insert a first coin into the slot 11, thereby contacting the roller 24, and forcing the lever member 21 upwardly so as to admit the coin beneath the roller 24. As the lever 21 rises upwardly it drags with it the drop rod 25 and rack 26 which is permitted to move upwardly by the escapement mechanism D. Once the lever 21 and rack 26 have moved upwardly however, they are held in the upper position by the operation of the escapement mechanism D, until subsequently released by operation of the escapement mechanism D. The first coin then passes down the coin chute 20 and into the coin rejector B. Assuming that the coin is a valid coin it will be passed through the rejector B, and down through the valid coin path 33. At this point, it is to be noted 20 that the coin blocking arm 72 is withdrawn out of the hole 35 in the rejector B, and therefore there is no obstacle to the passage of the coin at this point. As the coin drops into the coin acceptor mechanism C, it passes between the plates 50 and 51. The coin will then strike the coin deflector arm 54 which at this stage of the operation lies at an angle as shown in Figures 1 and 4.

Referring now more particularly to Figure 6, this illustration shows the actual sequence of operations

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following the contact of such first coin with the deflector arm 54. It will be noted that the coin is deflected to the left, i.e. towards the front of the machine and will then roll into the arcuate recess 59 at which point the weight of the coin will cause the counterweight 58 and deflector arm 54 to swing anti-clockwise until the arm 54 is more or less vertical. At this point, the swinging movement of the arm 54 is checked by the control pin 55 meeting the end of its slot 61, and the coin will then
10 be resting on the support plate 69.

The purchaser then inserts a second coin into the slot 11, and this second coin will of course meet with no resistance from the roller 24 since the lever 21 is then resting in its upper position. Thus such second coin will roll immediately down the chute 20 and pass through the rejector B along the valid coin path 33 and into the coin acceptor C. At this point it will be understood that the deflector arm 54 is in its vertical position, and therefore the control pin 55 is located more or less vertically
20 above the pivot pin 57, at the uppermost point of the arcuate slot 60. The arm 54 is therefore out of the path of travel of such second coin as it enters the coin acceptor C, and the coin will then pass vertically downwardly between the side walls 50 and 51 and into the chute 91 of the escapement release mechanism D. As such second coin passes downwardly between the side walls 50 and 51 of the coin acceptor C, the second coin will contact the coin detector arm 64 extending through the slot 67, and the detector arm 64 will then be pushed to one side causing the arm 64 to swing about the

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scraw 65. Such swinging movement will also procure corresponding swinging movement of the support arm 68 which will in turn cause withdrawal of the support plate 69 from its slots 70 and 71. Withdrawal of the support plate 69 will of course free the first coin which is resting on the plate 69 so that it can drop downwardly between the side walls 50 and 51, and past the escapement mechanism B, with which it has no contact at all, and into any suitable receptacle (not shown) for receiving coins.

10 At the same time, it will be noted that the swinging movement of the detector arm 64 will procure swinging movement of the coin blocking arm 72 in the opposite direction, thereby causing the blocking arm 72 to enter the holes 35 in the valid coin path 33 of the coin rejector mechanism B. Thus at this instant the valid coin path 33 is blocked and no further coins can enter it. However, in the normal operation of the apparatus such blocking is only instantaneous, as will become apparent from the following description.

20 As soon as the second coin, dropping down the chute 91 of the escapement mechanism D contacts the finger 95 of the arm 93 it will deflect the arm 93 and procure rotation of the drive shaft 94. Finger 95 is thus moved to one side of the chute 91, and the second coin can then drop from the chute 91 into the receptacle (not shown) located below for the purpose.

30 As noted above, rotation of the shaft 94 will, (by means not shown) procure operation of the escapement mechanism D thereby releasing the rack 26, drop rod 25, and lever member 21 so that they are free to fall downwardly. Downward

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movement of the rack 26 will drive a further drive shaft (not shown) which is connected to the article release mechanism E, the force of such driving movement being sufficient to procure operation of the article dispensing mechanism E and release a single article, in this case a single booklet of postage stamps from the bottom of the stack 18. The article will then drop into the chute 17 and slide downwardly through opening 15 to the shelf 16.

10 Reverting once more to the operation of the detector arm 64, it should also be noted that once the lever member 21 and drop rod 25 are held in their upper position, the camming bracket 74a is raised clear of the flange 74, thereby releasing the flange 74 to swing upwardly, with a corresponding downward swinging movement of the locking bar 73. Locking bar 73 will come to rest on the upper edge of the coin blocking arm 72, and, when the coin detector arm 64 is moved to one side by the passage of a coin, and the coin blocking arm 72 is moved into the hole 35, by such swinging movement the locking
20 bar 73 will then be free to drop down further, behind the coin blocking arm 72, and thereby prevent it from swinging backwardly once more.

However, as soon as the coin has passed through the escapement release mechanism D, and has thereby procured release of the ratchet 26, drop rod 25, and lever 21 so that they fall to their lower position, the cam bracket 74a will again contact the flange 74, and will cause it to swing downwardly, thereby swinging the locking bar 73 upwardly, and thereby releasing the coin blocking arm 72 so that it can
30 swing out of the hole 35.

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In this manner, the valid coin path 33 in the coin rejector B is completely blocked until such time as the machine has actually completed its cycle of operations and has released an article into the delivery chute 17. Until this has taken place, i.e., until the lever member 21 and drop rod 25 have actually dropped to their lower most position, the locking bar 73 will remain holding the coin blocking arm 72 in its blocking position. Thus if for some reason there should be any malfunction of the machine, or the escapement mechanism D should stick or jam, or for some reason a coin should become stuck in the chute 91 without deflecting the arm 93 then the valid coin path 33 will remain blocked, and all attempts to pass further coins through the machine will fail.

So long as there remains a supply of articles in the support column 18, the tongue member 78 will be held, by such articles, outside the column 18, and in turn the yoke member 75 will be held in its upper position as shown in Figure 3. However, when the supply of articles is exhausted the tongue member 78 will then be free to swing into the space between the two halves of the support column 18, and the yoke member 75 will then swing into its lower position. When it swings into this lower position the flange 79 will abut against the rear of the coin locking arm 72 and push it into the holes 35 in the coin rejector B. Thus when the machine is empty the valid coin path is permanently blocked and all coins inserted will be rejected.

In addition, downward swinging of the yoke 75 will also swing the hook 80 downwardly, thereby drawing the

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the checking arm 86 upwardly in its slot 87, thus removing the checking arm 86 from one side of the first coin. At the same time, operation of button 14, lever member 108 and finger 111, force operating pin 56 and deflector arm 54 to swing. Such swinging movement will cause counterweight 58 to roll the coin off the support plate 69 so that it enters and rolls down the chute 88 and out of the slot 13 (see Figure 5).

10 The second coin is meanwhile checked by the checking arm 86 and sequence control plate 89 so that it cannot interfere with the first coin. Release of button 14 will permit arm 86 to drop downwardly, thereby freeing the second coin which then passes down chute 88.

20 In the event that single coin operation is desired, then all that is required is to remove the lower of the screws 63, and to loosen the upper screw 63 or vice versa, and swing the plate 62 rearwardly so as to free the slot 60. The control pin 55 should then be swung to the bottom end of the slot 60, and the plate 62 swung back into position and the screws fastened once more. In this position the deflector arm 54 will be more or less upsidedown i.e. about vertically downwardly, and will be held there out of the path of a coin travelling through from the valid coin path 33 through the coin acceptor C. Thus the effect of passing a single coin into the machine, when it has been so adjusted, will be about the same as the passing the second of two

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coins through the machine in the operation above described.

It will therefore be understood that the apparatus above described provides for vending of articles in response to the insertion of either one coin or two, and that all that is required to change the machine from one mode of operation to the other is simply the adjustment of the plate 62, and the deflector arm 54 from one position to another.

10 The foregoing description of a preferred embodiment of the invention is given here by way of example only. The invention is not to be taken as limited to any of the specific features as described but comprehends all such variations thereof as come within the scope of the appended claimed.

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The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. In a coin operated vending machine, a coin acceptor mechanism, adjustably operable to accept one or two coins, to permit variation in the value of merchandise sold from said machine, said mechanism comprising;

means defining a coin delivery path;

first coin deflector means mounted for movement into and out of said path at a predetermined position therein and adapted when located in said path to deflect a said first coin out of said path;

first coin receptor means mounted for movement in unison with said deflector means, for receiving a coin deflected thereby and supporting same away from said path and maintaining said deflector means out of said path and leaving same clear for passage of a second coin therealong;

a detector member for detecting the presence of a second coin, said member being normally located in said path, below said deflector means and movably mounted for deflection from said path by passage of a coin therealong and,

a first coin release member movably mounted adjacent to said receptor, and operatively connected to said coin detector member whereby to release said first coin upon operation of said detector member.

2. In a coin operated vending machine, a coin acceptor as claimed in claim 1 including coin delivery path blocking means movably mounted adjacent said path and normally located out of said path, and movable into said path upon deflection of said coin detector member by passage of a coin along said path, so as to move into said path and block the same against entry of any subsequent coins, and,

means for releasing said coin blocking member from said

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coin path blocking relationship upon delivery of an article of merchandise from said machine.

3. In a coin operated vending machine, a coin acceptor mechanism as claimed in claim 1 including means for securing said first coin deflector means out of said path, thereby leaving said coin delivery path free for passage of a coin directly to said coin detector member, whereby to procure single coin operation of said vending machine.

4. In a coin operated vending machine, a coin acceptor mechanism as claimed in claim 1 wherein said first coin deflector means comprises an arm member, pivotally mounted about one end and provided with a deflector pin at its free end, and wherein said first coin receptor means comprises a counterweight member formed integrally with said arm, and pivoting in unison therewith, and extending substantially on the opposite side of said pivot axis from said arm, and provided with a coin receiving recess therein.

5. In a coin operated vending machine, a coin acceptor mechanism as claimed in claim 1 including means defining a rejected coin path, and jammed coin discharge mechanism, manually operable whereby to discharge a coin jammed in said machine, and delivering same to said rejected coin path, and a coin checking member located adjacent said first coin receptor means, said coin checking member checking movement of said first coin from said receptor means into said rejected coin return path, and mechanism connecting said coin checking member to said manually operable discharge means whereby to discharge said coin checking member upon operation of said discharge means and permit movement of a said first coin from said receptor means down said rejected coin path.

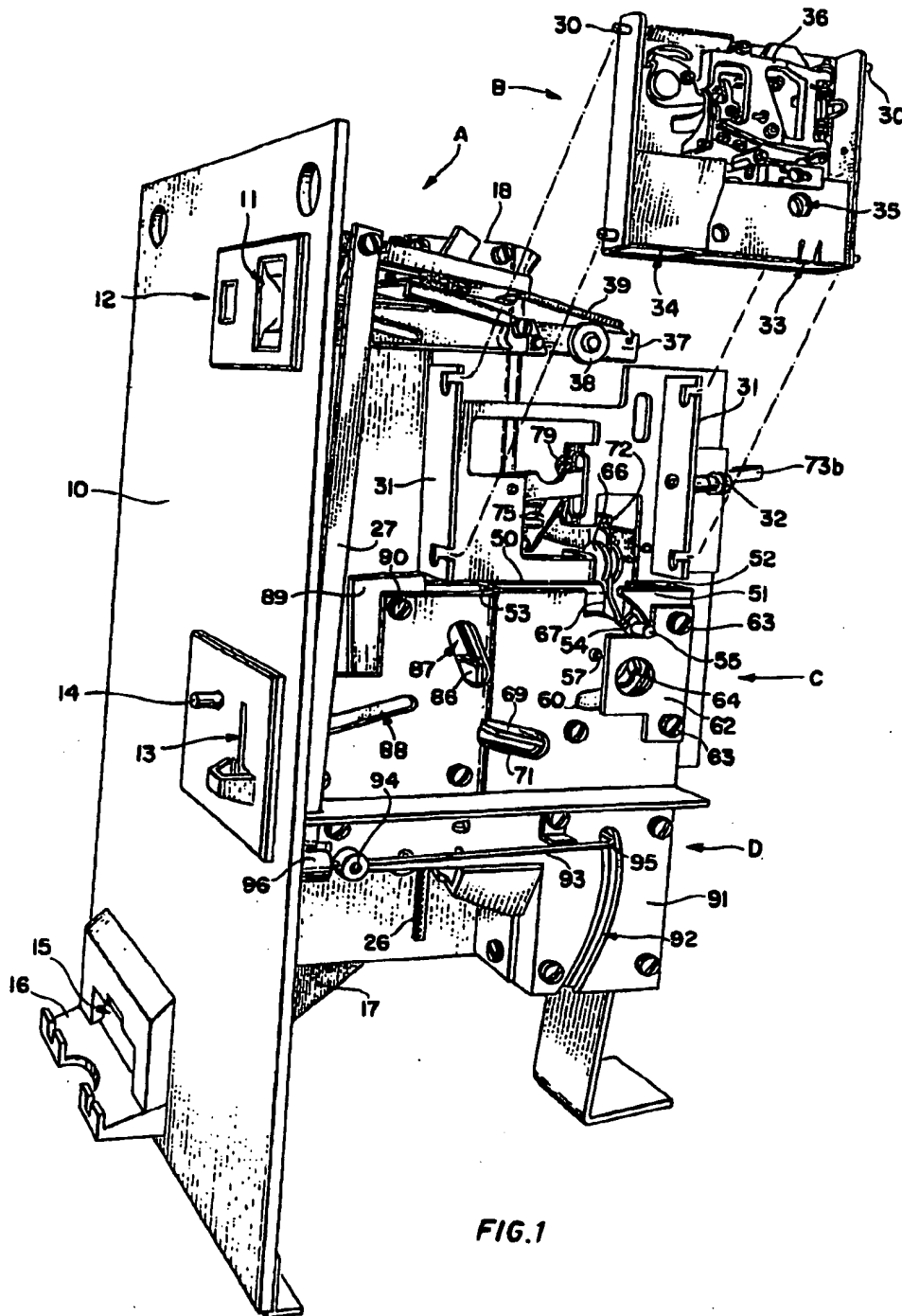
6. In a coin operated vending machine, a coin acceptor

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mechanism as claimed in claim 1 including manually operable jammed coin discharge mechanism, and means connecting said discharge mechanism to said first coin receptor means, whereby upon operation of said discharge mechanism, said first coin receptor means is operated to move a said first coin received therein, and deliver the same on a rejected coin path.

7. In a coin operated vending machine a coin acceptor mechanism as claimed in claim 1 wherein said first coin release member comprises a supporting flange member located and adapted to extend under a said first coin received by said receptor means, and being swingably moveable out of said supporting relationship upon operation of said second coin detector member.





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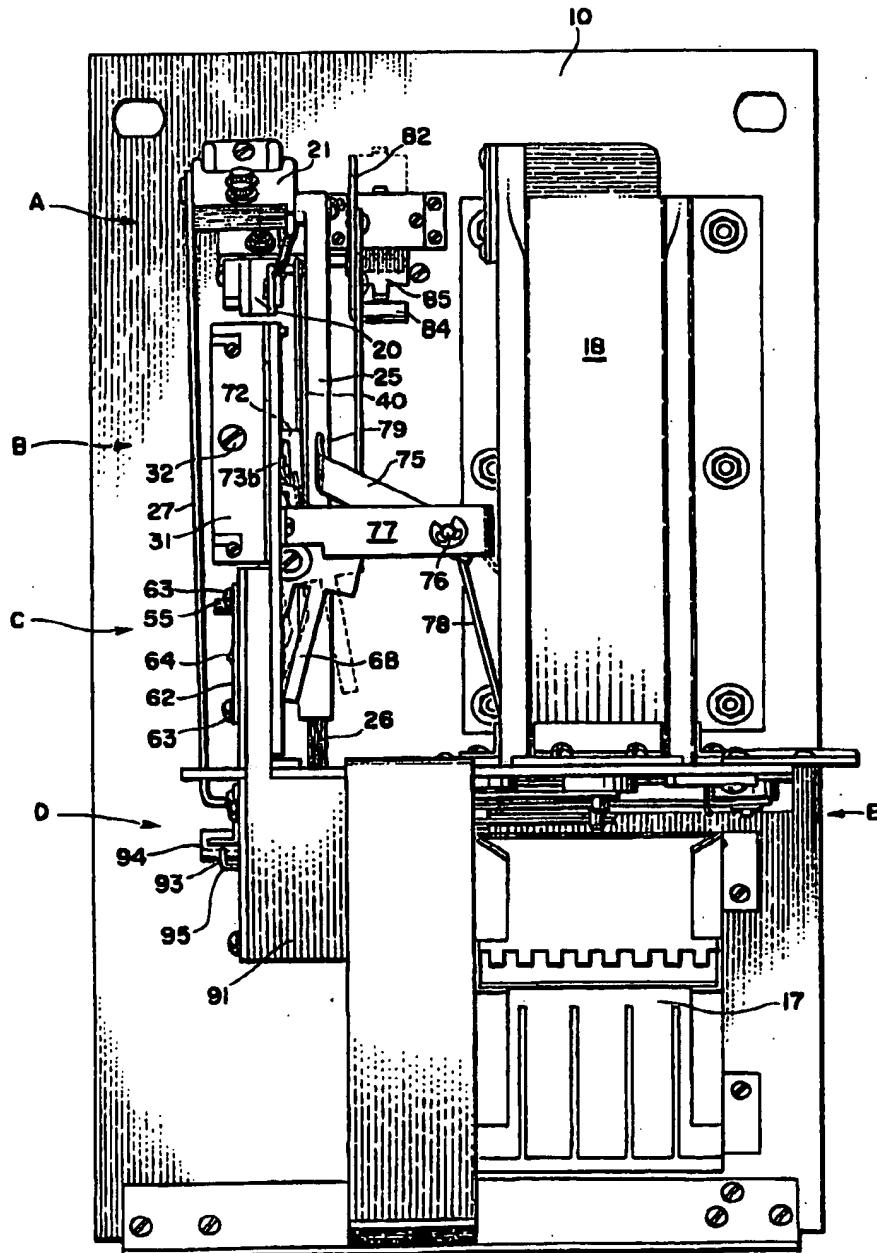
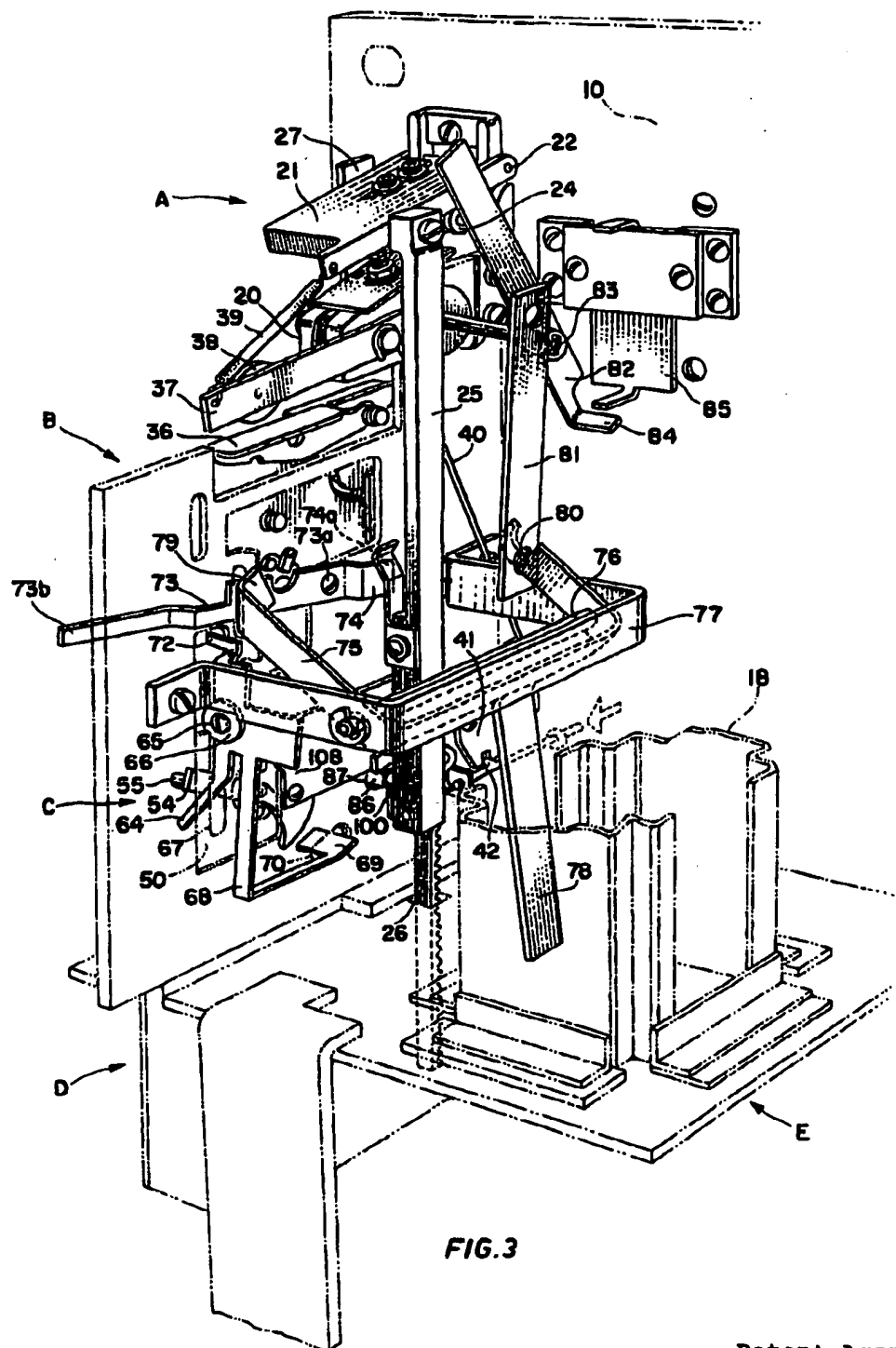


FIG. 2

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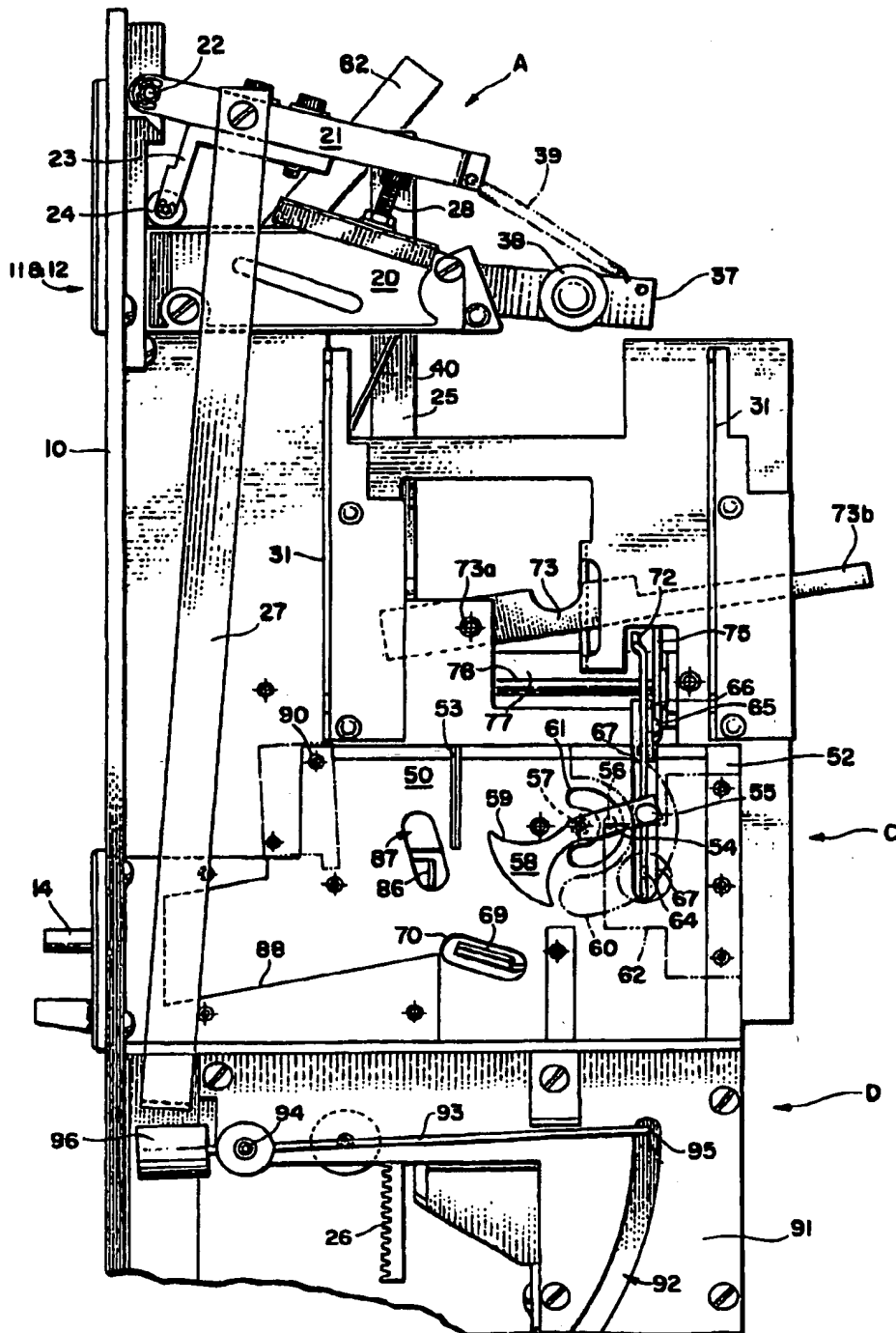


FIG. 4

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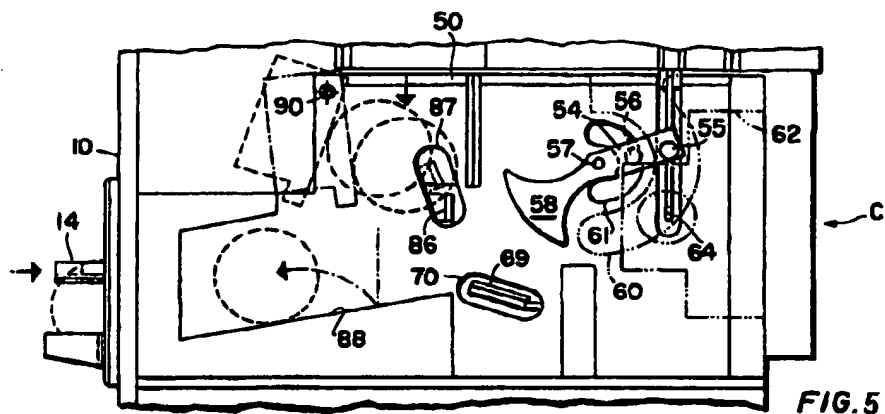


FIG. 5

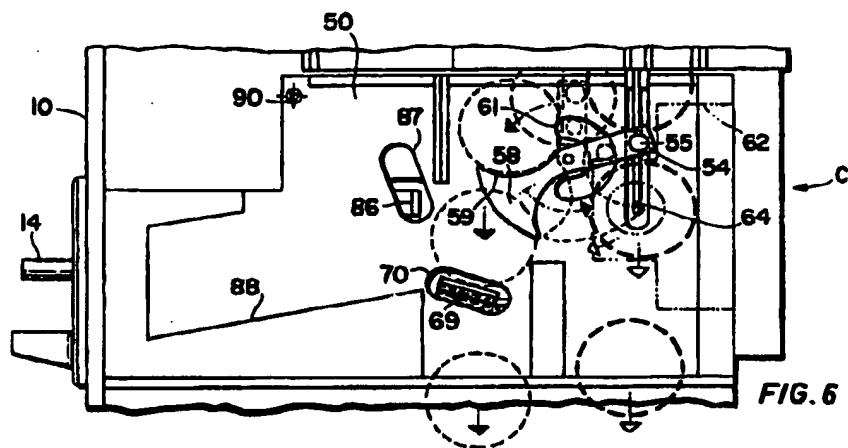


FIG. 6

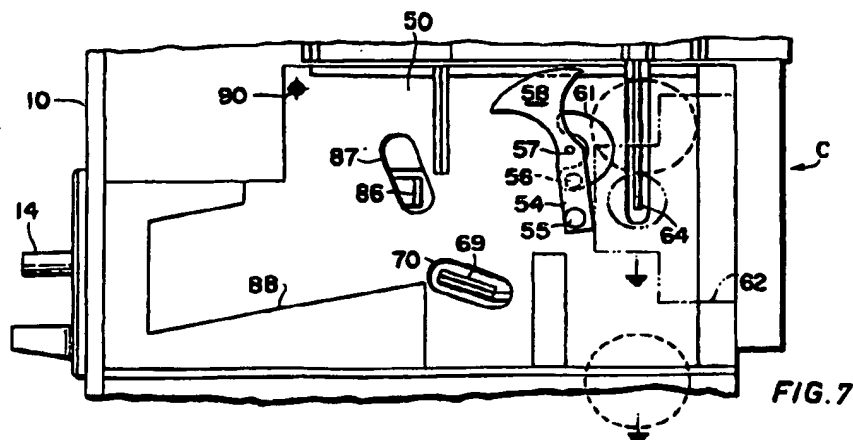
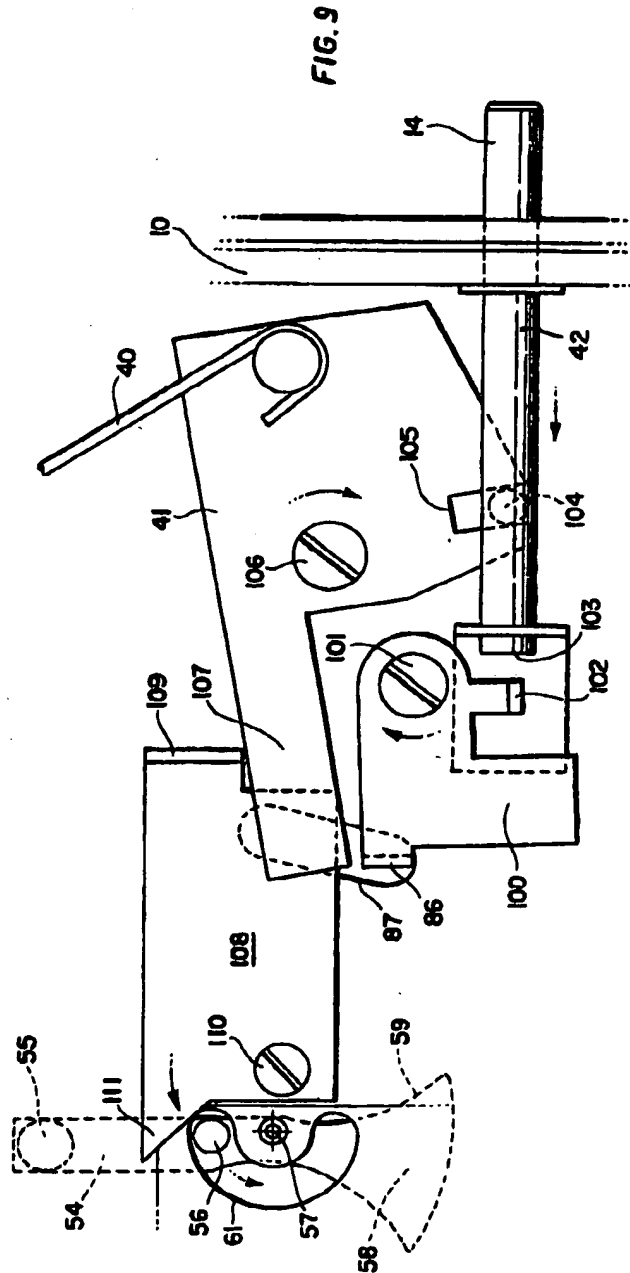
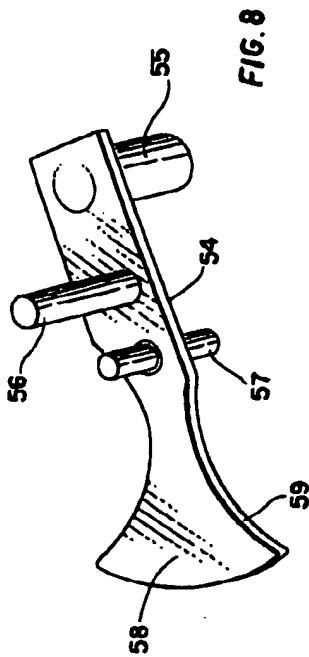


FIG. 7

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